



Deval L. Patrick, Governor
Richard A. Davey, Secretary & CEO
Frank DePaola, Administrator



604428 – 14

AUGUST 29, 2014

ADDENDUM NO. 1

To Prospective Bidders and Others on:

CHELSEA

**Construction of the Silverline Gateway Busway,
BRT Stations and Bridge Replacement (Steel) Br. No. C-09-001
Washington Avenue over the MBTA Railroad**

BIDS TO BE OPENED AND READ:

TUESDAY, SEPTEMBER 16, 2014 at 2:00 P.M.

Transmitting changes to the Contract Documents as follows:

RESPONSE TO CONTRACTOR QUESTIONS

2 Pages Attached

DOCUMENT 00010

Revised Page 1

DOCUMENT 00102

Revised Pages 1 thru 3

DOCUMENT 00715

Replaced Document

Please take note of the above, substitute the revised pages for the originals, and acknowledge Addendum No. 1 in your Expedite Proposal file before submitting your bid.

Very truly yours,

Frank Kucharski, P.E.
Construction Contracts Engineer

jb
c J. Pavao, Project Manager

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CHELSEA
**Construction of the Silverline Gateway Busway,
BRT Stations and Bridge Replacement (Steel) Br. No. C-09-001
Washington Avenue over the MBTA Railroad**

Questions from P. Gioioso & Sons, Inc. Dated 08/29/2014 @ 7:03 AM:

Regarding the retaining walls, Items 996.01 to 996.04, please clarify the following –

Question 1) Will the Department provide estimated quantities for the Lump Sum Breakdowns found on pages 255-256 of the Special Provisions ?

Response 1) This question to be answered in a future addendum.

Question 2) On the LS Breakdown for Item 996.02, there is a line item for HP24x207, however the plans only indicate the “piles” as W24x279 and W24x146. Please clarify.?

Response 2) This question to be answered in a future addendum.

Question 3) On the LS Breakdown for Item 996.03 & .04, there is a line item for HP24x207, however the plans only indicate the “piles” as W24x279 and W24x162 on Wall #3 and W24x146 on Wall #4. Please clarify.

Response 3) This question to be answered in a future addendum.

Question 4) Page 250 of the Special Provisions states that the exposed face of the pile shall be painted. Please confirm that only the visible face of the outer flange shall be painted. If this is the case, should the outer edges of the outer flange be painted ?

Response 4) This question to be answered in a future addendum.

Question 5) The Special Provisions (pages 251 and 253-254) provide a painting specification for the Safety Railings. Does this specification also apply to the exposed face of the vertical piles ?

Response 5) This question to be answered in a future addendum.

Question 6) On page 253 of the Special Provisions, the drilled holes are indicated as 24” diameter, however the plans indicate that they are 42” diameter. Please clarify.

Response 6) This question to be answered in a future addendum.

CHELSEA
Construction of the Silverline Gateway Busway,
BRT Stations and Bridge Replacement (Steel) Br. No. C-09-001
Washington Avenue over the MBTA Railroad

Question 7) On page 253 of the Special Provisions, 2nd paragraph, states that 3,000 psi lean concrete shall be used. Is 3/8" aggregate acceptable for this mix? Can the concrete be placed at high slumps using super-plasticizers ? Both aspects would provide better consolidation around the steel pile, and would also assist with tremie placements should they be required.

Response 7) This question to be answered in a future addendum.

Question 8) On sheet 234 of the Bridge Plans (Stage 2 Construction Plan), please confirm that the vehicular traffic will be traveling Northbound, not Southbound as indicated by the arrow on the plan.

Response 8) This question to be answered in a future addendum.

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① **ADDENDUM NO. 1, AUGUST 29, 2014**

DOCUMENT 00102

**NOTICE TO CONTRACTORS**

Electronic proposals for the following project will be received through the internet using Bid Express until the date and time stated below and. will be posted on www.bidx.com forthwith after the bid submission deadline. No paper copies of bids will be accepted. Bidders must have a valid digital ID issued by MassDOT in order to bid on projects. Bidders need to apply for a Digital ID at least 14 days prior to a scheduled bid opening date with Bid Express.

TUESDAY, SEPTEMBER 16, 2014 at 2:00 P.M.**CHELSEA**

**Construction of the Silverline Gateway Busway,
BRT Stations and Bridge Replacement (Steel) Br. No. C-09-001
Washington Avenue over the MBTA Railroad
(604428)**

PROJECT VALUE = \$38,260,000.00

- ① **For the track and signal systems work on the project, bidders must be prequalified by the MBTA in the following classes of work:**

CLASS I – GENERAL TRANSIT CONSTRUCTION**CLASS 2 – GRADING DRAINAGE & SITE DEVELOPMENT****CLASS 3 – TRACKAGE****CLASS 6A – TRANSIT/RAILROAD SIGNALING**

MassDOT Highway Division's requirement for bidders to be prequalified in the category of HIGHWAY – CONSTRUCTION remains in effect.

An award will not be made to a Contractor who is not pre-qualified by the Department prior to the opening of Proposals.

Contractors intending to bid on this project must first complete a "Request for Proposal Form"(R-109 Form) and e-mail an electronic copy of this document to the MassDOT Director of Prequalification for approval. Please e-mail these documents to prequal.r109@state.ma.us .

Blank "Request for Proposal Forms"(R-109 Forms) can be obtained at <http://www.massdot.state.ma.us/highway/Departments/PrequalificationofHorizontalConstructionForms.aspx>

Select the link "Request for Official Proposal Form (R-109 Form)"

ADDENDUM NO. 1, AUGUST 29, 2014**NOTICE TO CONTRACTORS** (Continued)

Upon approval, the official bidder shall be entitled to receive an officially numbered Compact Disc (CD) containing the plans and specifications, free of charge. Other interested parties may also receive an informational copy of the CD containing the plans and specifications, free of charge. It should be noted that informational copies can not be used for bidding purposes. The bidding for and award of the contract for this project is to be in accordance with the requirements of Massachusetts General Laws Chapter 30 § 39M.

All parties who wish to have the CDs shipped to them must provide a completed mailing label with an approved carrier account number for overnight mail service (i.e. – Federal Express) to the MassDOT Bid Document Distribution Center, Room 6261, 10 Park Plaza, Boston, MA 02116.

A Proposal Guaranty in the amount of 5% of the value of the bid is required either using BidX's online form or by separately submitting an electronic copy of the Proposal Guaranty via e-mail to MassDOTBidBonds@dot.state.ma.us.

Bidders are on notice that this project is subject to the schedule of prevailing wage rates as determined by the Commissioner of the Massachusetts Department of Labor and Workforce Development, Division of Occupational Safety.

Plans will be on display and information will be available at the MassDOT Boston Office and at the District Office in BOSTON.

This Contract contains price adjustments for hot mix asphalt and Portland cement mixtures, diesel fuel, and gasoline. For this project the base prices are as follows: liquid asphalt \$640.00 per ton, Portland cement \$118.00 per ton, diesel fuel \$3.329 per gallon, and gasoline \$3.207 per gallon. MassDOT posts the **Price Adjustments** on their Highway Division's website at <http://www.massdot.state.ma.us/Highway/> under the following link sequences:

Doing Business With Us
Construction
Price Adjustments

STEEL PRICE ADJUSTMENT

This Contract contains Price Adjustments for steel. See Document 00813 - PRICE ADJUSTMENT FOR STRUCTURAL STEEL AND REINFORCING STEEL of the Special Provisions for their application.

The Base Prices for these items on this project are as follows:

Rebar

ASTM A615/A615M Grade 60 (AASHTO M31 Grade 420) Reinforcing Steel = \$0.37 per pound

ADDENDUM NO. 1, AUGUST 29, 2014**NOTICE TO CONTRACTORS** (Continued)**Structural Steel**

ASTM A709 (AASHTO M270) Grade 50 Structural Steel Plate =	<u>\$0.53 per pound</u>
ASTM A709 (AASHTO M270) Grade 50 Structural Steel Shapes=	<u>\$0.43 per pound</u>
ASTM A709 (AASHTO M270) Grade 50W Structural Steel Plate =	<u>\$0.64 per pound</u>
ASTM A709 (AASHTO M270) Grade 50W Structural Steel Shapes =	<u>\$0.45 per pound</u>
ASTM A328/328M, Grade 50 (AASHTO M202) Steel Sheetpiling =	<u>\$1.01 per pound</u>
ASTM A572/A572M, Grade 50 Sheetpiling =	<u>\$1.01 per pound</u>

BID SUBMITTAL REQUIREMENTS

Bids shall be submitted electronically according to the requirements of the Expedite software and the Bid Express Web site. Bidders' attention is directed particularly to the following sections of the Supplemental Specifications dated June 15, 2012: "Section 2.00 Proposal Requirements and Conditions" and "Section 3.00 Award and Execution of the Contract."

MassDOT projects are subject to the rules and regulations of the Architectural Access Board (521 CMR 1.00 et seq.)

Prospective bidders and interested parties can access this information and more via the internet at WWW.COMMBUYS.COM.

BY: Richard A. Davey, Secretary and CEO, MassDOT
Frank A. DePaola, P.E., Administrator, MassDOT Highway Division

2E SATURDAY JULY 19, 2014

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ADDENDUM NO. 1, AUGUST 29, 2014

DOCUMENT 00715

**INTERIM SUPPLEMENTAL SPECIFICATIONS****(English / Metric Units)**DATE: August 22, 2014

The 1988 *Standard Specifications for Highways and Bridges*, the 1995 *Standard Specifications for Highways and Bridges (Metric)* and the *Supplemental Specifications dated June 15, 2012 (combined English and Metric)* are amended by the following modifications, additions and deletions. These Interim Supplemental Specifications prevail over those published in the Standard Specifications and the Supplemental Specifications.

The MassDOT-Highway Specifications Committee has issued these Interim Supplemental Specifications for inclusion into each proposal until such time as they are approved as Standard Specifications.

Contractors are cautioned that these Interim Supplemental Specifications are periodically updated and may vary from project to project.

ALL SECTIONS

(SUPPLEMENT C2012-1) Replace this section with the following:

Global Changes

Replace the words *Qualified Product Listing maintained by the Research and Materials Division, 400 D Street, South Boston Ma. 02110-1953, telephone number 617-526-8686* and all variations thereof with *Qualified Construction Materials List* at each occurrence.

Change the words *Bituminous Concrete* and *Class I Bituminous Concrete Type I-1* to *Hot Mix Asphalt* at each occurrence.

Change the words *Cement Concrete Masonry* to *Cement Concrete* at each occurrence.

Change the words *Linear Foot* and *Vertical Foot* to *Foot* at each occurrence.

Change the words *ground granular blast-furnace slag* to *slag cement* at each occurrence.

ADDENDUM NO. 1, AUGUST 29, 2014

DIVISION I
GENERAL REQUIREMENTS AND COVENANTS

SECTION 3.00
AWARD AND EXECUTION OF CONTRACT

SUBSECTION 3.04 Contract Bonds Required.

(page 11 English, page I.14 Metric, page SUPPLEMENT C2012-7) Replace the last paragraph of the subsection with the following:

All alterations, extensions of time, extra work and any other changes authorized under these specifications, or under any part of the Contract may be made by the Department. The Contractor shall notify the surety or sureties regarding changes to the Contract. The Contractor shall provide evidence of revised bond.

Where the Contract utilizes additional artisans, equipment rental, materials, engineering services and specialty services to complete work assignments approved by the Engineer, the Contractor shall notify the surety of the additional work and provide the Department with documentation that the bond has been revised to cover such work.

SECTION 4.00
SCOPE OF WORK

SUBSECTION 4.03 Extra Work (Also see Subsection 4.05).

(page 12 English, page I.15 Metric) Change the words Subsection 8.10, Part F. to Subsection 8.10. in the second paragraph.

SUBSECTION 4.04 Changed Conditions.

(page I.16 Metric) In the third sentence of the second paragraph delete the words "... or a change in the cost of performance of the work..."

(page 13 English, page I.16 Metric) Replace the second sentence in paragraph (a) with the following:

The Engineer shall promptly investigate the conditions, and shall promptly prepare a written report of the findings, with a copy to the Contractor. If the Engineer finds that such conditions as have been described in detail by the Contractor do exist and in fact do so differ materially or substantially, an equitable adjustment shall be made and the Contract modified in writing accordingly.

SUBSECTION 4.05 Validity of Extra Work.

(page 14 English, page I.17 Metric) Delete the words "... Chapter 29, Section 20A and..."

SECTION 5.00
CONTROL OF WORK

SUBSECTION 5.02 Plans and Detail Drawings.

(page SUPPLEMENT C2012-9) Replace the second paragraph of this subsection with the following:

Contract drawings, supplemental plans and detail drawings designed by the Department are part of the complete plans. Shop drawings, detail drawings, erection drawings, catalog cuts, temporary structures and other plans designed and or submitted by the Contractor as required in the Specifications shall, upon approval by the Engineer, become part of the complete set of plans.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION 5.02** (Continued)

(SUPPLEMENT C2012-10) Replace the 8th paragraph of the Subsection (first paragraph of the page) with the following:

The Contractor shall submit two sets of full-scale shop drawing prints to the Engineer for approval. If corrections are required, one set of the marked-up drawings will be returned to the Contractor for revision and subsequent re-submittal. The Engineer shall make all copies of the approved shop drawings as indicated in Table 1 of Subsection 5.02 and will distribute the drawings. No changes shall be made to the approved drawings without the written consent of the Engineer.

SECTION 6.00 CONTROL OF MATERIALS

SUBSECTION 6.01 Source of Supply and Quality.

(page 20 English, page I.26 Metric, SUPPLEMENT C2012-12) Replace the 11th and 12th paragraphs in the Supplement, both beginning with Materials for..., with the following:

Materials for permanent construction shall be new, shall conform to the requirements of these specifications, and shall be approved by the Engineer.

Materials for temporary structures or supports adjacent to traveled ways, the failure of which would compromise the safety of the public or the traveled ways, need not be new but shall conform to the requirements of these specifications, and shall be approved by the Engineer. For any material that is not new, the Contractor shall be required to submit certification by a Structural Professional Engineer that the material meets the requirements for the intended use.

These requirements shall not apply to gantry systems and supports as well as other mechanized systems.

SECTION 7.00 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

SUBSECTION 7.02 Pollution Prevention.

(SUPPLEMENT C2012-16) Under B. Construction Dust Control, delete the words wet mopping in the second paragraph.

SUBSECTION 7.04 Motor Vehicles.

(page 24 English, page I.32 Metric) Replace the first paragraph with the following:

All motor vehicles (except vehicles used solely for transporting employees to and from the project) and trailers used wholly or in part within the Commonwealth by the Contractor or any Subcontractor, or by any person directly or indirectly employed by them in the execution of the Contract, shall be registered in the Commonwealth of Massachusetts and bear Massachusetts registration plates except as stipulated in Subsection 7.03.

SUBSECTION 7.09 Public Safety and Convenience.

(page 27 English) Change the word include to included in the last sentence of the third paragraph.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION 7.23 Archeological and Paleontological Discoveries.**

(page 37 and 38 English, page I.47 Metric) Replace this Subsection with the following;

7.23 Discovery of Unanticipated Archaeological and Skeletal Remains.

Should any archaeological remains be encountered during any phase of construction, the Contractor shall immediately cease all construction activities in the discovery area, secure the area and notify the Engineer. The Engineer shall immediately notify the MassDOT Environmental Services Section in Boston Headquarters Office. The MassDOT Archeologist shall inspect the remains and their context in order to evaluate the discovery.

In the event a potentially significant archaeological find is encountered, as determined by the MassDOT Archeologist, the Contractor shall carefully protect the discovery area by placing snow fencing and/or flagging (with an approximately 30-foot buffer zone) around the find(s). The MassDOT Archeologist shall notify the Federal Highway Administration (if the project is federally funded), the Massachusetts State Archaeologist, the Massachusetts State Historic Preservation Officer/Executive Director of the Massachusetts Historical Commission and other relevant parties (the Massachusetts Commission on Indian Affairs, Tribal Historic Preservation Officers) of the discovery and serve as the liaison on all subsequent actions. Outside the protected discovery area, construction work may continue.

Construction may not resume in the discovery area until the MassDOT Archeologist has secured all necessary regulatory approvals and given the approval to continue to the Engineer.

If skeletal remains are discovered during construction, the Contractor shall immediately cease all work in the discovery area, secure and protect the area and notify the Engineer as stipulated above. The Engineer shall immediately contact the State Medical Examiner, the police and the MassDOT Archeologist. If the skeletal remains prove to be human and more than 100 years old, as determined by the State Medical Examiner, the MassDOT Archeologist shall consult with the Massachusetts State Archaeologist and other relevant parties pursuant to all procedures and protocols under the Massachusetts Unmarked Burial Law (M.G.L. Chapter 38, Section 6; M.G.L. Chapter 9, Section 26A and 27C; and M.G.L. Chapter 7, Section 38A) and Section 106 of the National Historic Preservation Act as amended, and its implementing regulations for emergency situations and post-review discoveries [36 CFR 800.12(b)(2) or 36 CFR 800.13(b)].

SECTION 9.00 MEASUREMENT AND PAYMENT

SUBSECTION 9.03 Payment for Extra Work.

(page 45 English, page I.57 Metric and SUPPLEMENT page C2012-25) Replace this Subsection with the following:

A. Payment for work for which there is a unit price provided for in the Contract.

Where the Contract contains a unit price for work and the Engineer orders Extra Work for work of the same kind as other work contained in the Contract and is performed under similar physical conditions, the Contractor shall accept full and final payment at the Contract unit prices for the accepted quantities of Extra Work done.

No allowance will be made for any increased expenses or any damages whatsoever.

B. Payment for work or materials for which no price is contained in the Contract.

If the Engineer directs, the Contractor shall submit promptly in writing to the Engineer an offer to do the required work on a lump sum or unit price basis, as specified by the Engineer. The stated price, either lump sum or unit price, shall be divided so as to show that it is the sum of: (1) the estimated cost of direct labor, materials, and the use of equipment, plus 10 percent of this total for overhead; (2) plus the actual cost of Workmen's Compensation and Liability Insurance, Health, Welfare and Pension benefits, Social Security deductions, Employment Security Benefits, and such additional fringe benefits which the Contractor is required to pay as a result of Union Labor Agreements and/or is required by authorized governmental agencies; (3) plus subcontractor or a Public or Private Utility costs; (4) plus 10 percent of the total of (1), (2) and (3); (5) plus the estimated proportionate cost of surety bonds.

Unless an agreed lump sum and/or unit price is obtained from above and is so stated in the Extra Work Order the Contractor shall accept as full payment for work or materials for which no price agreement is contained in the Contract an amount equal to the following: (1) the actual cost for direct labor, material (less value of salvage, if any) and use of equipment, plus 10 percent of this total for overhead; (2) plus actual cost of Workmen's Compensation and Liability Insurance, Health, Welfare and Pension benefits, Social Security deductions, and Employment Security Benefits; (3) plus subcontractor or a Public or Private Utility costs; (4) plus 10 percent of the total of (1), (2) and (3); (5) plus the estimated proportionate cost of surety bonds.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION 9.03 (Continued)**

Costs incurred for traffic police, railroad flagging and permits will be reimbursed without mark-up for overhead or profit.

No allowance shall be made for general superintendence and the use of small tools and manual equipment.

The Contractor shall, when requested by the Engineer, furnish itemized statements of the cost of the work ordered and give the Engineer access to all accounts, bills and vouchers relating thereto, and unless the Contractor shall furnish such itemized statements, access to all accounts, bills and vouchers, the Contractor shall not be entitled to payment for any items of extra work for which such information is sought by the Engineer.

C. Equipment Rates.

In the event there arises the need for determination of costs of use of equipment as part of “actual costs” or “cost of performance” or “damages” under Subsections 4.04, 7.16, 8.05, 9.02 and/or 9.03, or under Chapter 30 of the Massachusetts General Laws, such costs for use of equipment shall be established in accordance with the following:

(1) “Construction equipment” as used herein means equipment in sound workable condition, either owned or controlled by the Contractor or the Subcontractor at any tier, or obtained from a commercial rental source, and furnished for use under the contract.

(2) Allowable hourly ownership and operating costs for contractor-owned or subcontractor-owned equipment shall be determined as follows:

a) Actual cost data from the Contractor’s accounting and operating records shall be used whenever such data can be determined for hourly ownership and operating costs for each piece of equipment, or groups of similar serial or series equipment. Actual costs shall be limited to booked costs of the annual accounting period or periods during which the equipment was utilized on the Contract, and will not include estimated costs not recorded and identifiable in the Contractor’s formal accounting records. The Contractor shall afford Department auditors full access to all accounting, equipment usage, and other records necessary for development or confirmation of actual hourly cost rates for each piece of equipment, or groups of similar serial or series equipment. The Contractor’s refusal to give such full access shall invalidate any request or claim for payment of the equipment costs. When costs cannot be determined from the Contractor’s records, hourly equipment cost rates may be determined under (b) and (c) below.

b) When the Department ascertains that it is not practicable to determine actual equipment cost rates from the Contractor’s records, hourly equipment cost rates for equipment owned by the Contractor may be determined by the use of rate schedules (with adjustments) contained in the Equipment Watch Rental Rate Blue Book(s); said publication is incorporated herein by reference.

The Contractor shall provide to the Department, in a format prescribed by the Department, sufficient descriptive ownership and operating records and documentation for each piece of equipment subject to the extra work so that the equipment rates may be determined and adjusted as follows:

- (1) Hourly equipment rates shall be the FHWA rate contained in the Rental Rate Blue Book adjusted by application of the Rate Adjustment Tables (for machine age adjustment) plus adjustments to eliminate equipment overhead (indirect ownership) plus regional adjustments (the weekly, hourly and daily rates listed in the Rental Rate Blue Book will not be used). This rate shall be defined as ‘Adjusted FHWA Rate’.
- (2) Equipment standby rates shall be the ‘Adjusted FHWA Rate’ as described in (1) above, minus the operating rate and reduced by 50%. Standby rates shall not include operating rates:
$$\text{Equipment standby rate} = (\text{Adjusted FHWA Rate} - \text{Estimated Operating Rate})/2$$

The number of equipment hours to be paid for under the extra work or force account work shall be the number of hours that the equipment is actually used on a specific extra work or force account activity.

The current version of the Rental Rate Blue Book will be used in establishing equipment rates. The version applicable to specific extra work or force account work will be the version in effect as of the first day of work is performed on that force account work and that rate shall apply throughout the period the force account work is being performed.

The Department may allow calculation of equipment rates based upon other equipment rate books and guides (i.e. Construction Equipment Ownership and Operating Expense Schedule, Region One published by the Army Corps of Engineer’s) or hybrid rates determined to be reasonable by the Department.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION 9.03 (Continued)**

c) In those cases where a 10 percent additive for overhead and profit is to be superimposed on the equipment costs as provided in Subsections 4.04, and 9.03B, equipment cost rates determined under (a) and (b) above shall exclude any overhead costs such as equipment insurance, licenses, or taxes. The 10 percent additive shall compensate the Contractor for all overhead costs, including equipment overhead, general superintendence, small tools, manual equipment, field overhead, and central office overhead. Where the 10 percent overhead additive is not applicable, overhead items clearly related to equipment, (equipment insurance, licenses, taxes), shall be included in the equipment rates; provided, however, that such costs shall be identified and eliminated from any other direct or indirect costs or damages payable by the Department under the Contract. No element of profit shall be allowable in equipment cost rates for Contractor-owned equipment; it being understood that a 10 percent profit additive will be superimposed upon equipment costs when called for by the Contract.

(3) Reasonable hourly costs of renting equipment are allowable subject to the Contractor producing adequate records supporting actual costs incurred, provided further that:

a) Costs such as fuel, lubricants, and minor or running repairs incident to operating such rented equipment that are not included in the rental rate are allowable.

b) Costs incidental to major repair and overhaul of rental equipment are not allowed.

c) Charges for equipment leased or rented from any division, subsidiary organization under common control, or business under common ownership, ordinarily will be reimbursable to the extent that they do not exceed the actual costs of ownership and operating costs determined as in (2), above. Rental cost of equipment leased or rented from any division, subsidiary, affiliate of the Contractor under common control, or business under common ownership, that has an established practice of renting out the same or similar equipment to unaffiliated parties, shall be allowed at rates higher than actual ownership and operating costs, provided that the Contractor furnishes the Department adequate documentation, including the rental and usage records for the same or similar equipment items, demonstrating a reasonable likelihood that the equipment would have been rented out if not used on this Contract, and that the rental rates charged are consistent with rates charged to unaffiliated parties and going market rates. Rental costs under a sale and leaseback arrangement will be allowable only up to the amount the Contractor would be allowed if the Contractor retained title.

(4) Equipment cost rates determined in (2) and (3) shall be exclusive of labor cost of equipment operators. Such costs shall be reimbursable subject to the Contractor producing adequate payroll and other records sufficient for determination of hours, pay rates, and reimbursable fringe costs as defined in Subsection 4.04 and above.

(5) Except in cases of unit price or lump sum extra work orders approved by the Department before the work is done, actual reimbursable hours of equipment usage and operator time must be adequately documented by the Department force account records or Contractor field and office records maintained during performance of the work in a manner acceptable to the Department. Failure of the Contractor to so maintain time records which adequately segregate added equipment hours caused by extra work required by the Department, or caused by other Department actions cited in the Contractor's claim for damages, from other equipment time worked on the Contract, when maintenance of such records would have been feasible, shall constitute a cardinal omission of the Contractor, invalidating any claim for equipment cost reimbursement.

The above provisions constitute an advanced agreement made in general conformance with intent of Federal Acquisition Regulation 31.105, paragraph (d)(1), said intent being to maximize clarity of understanding and minimize possible disputes with respect to determination of reimbursable actual equipment costs under this Contract.

ADDENDUM NO. 1, AUGUST 29, 2014**DIVISION II
CONSTRUCTION DETAILS****SECTION 227. DRAINAGE SYSTEM SEDIMENT**

(page 79 English, page II.32 Metric) Add the following Section in numerical order:

**SECTION 227
DRAINAGE SYSTEM SEDIMENT****DESCRIPTION****227.10 General.**

The work shall consist of removal and disposal of accumulated sediment, which may contain refuse and other debris, from designated drainage systems, including: drainage structures, pipes, the gutter mouth of curb inlets, and as directed by the Engineer.

CONSTRUCTION METHODS**227.21 Regulatory Requirements.**

Drainage system sediment is classified as a solid waste by the DEP and must be handled and disposed in accordance with Solid Waste Management Regulations 310 CMR 19.000, as well as all other applicable DEP policies and guidance.

Sediment must arrive at the disposal facility sufficiently dry since DEP regulations prohibit landfills from accepting materials that contain free draining liquids. A permitted solid waste disposal facility may require characterization of the material prior to accepting it for disposal at the facility. The Contractor shall provide copies of all material shipping records to the Engineer.

227.23 Prosecution of Work.

No casting shall be removed until immediately preceding the work and shall be replaced immediately after the cleaning of the drainage structure and/or pipes is completed. Open catch basins shall not be left unattended. The Contractor shall properly secure the grate locking device after cleaning.

The Contractor shall protect the cast iron hood of drainage structures so equipped, during the sediment removal process. Equipment used to collect drainage system sediment shall be capable of decanting free flowing liquids back into the drainage system. Conditions such as location, extraordinary shape due to conduits or public utility pipes, or off pavement work, may require hand work. Drainage system sediment shall be transported to a disposal facility in trucks that will not spill the material along the roadway. Any sediment falling on the roadway shall be removed by the Contractor at his own expense.

COMPENSATION**227.30 Method of Measurement.**

Sediment removed from drainage structures will be measured by the cubic yard after decanting.

Sediment removed from drainage pipes will be measured by the foot of drainage pipe, regardless of the diameter of pipe from which material is removed.

227.31 Basis of Payment.

Removal and disposal of drainage structure sediment will be paid for at the contract unit price per cubic yard.

Removal and disposal of drainage pipe sediment will be paid for at the contract unit price per foot, regardless of the volume of sediment removed.

The price of these items shall include all labor, equipment, approvals, permits, testing, transportation, disposal and all other incidentals necessary to complete the work.

ADDENDUM NO. 1, AUGUST 29, 2014**SECTION 227 (Continued)****227.32 Payment Items.**

227.3	Removal of Drainage Structure Sediment	Cubic Yard
227.31	Removal of Drainage Pipe Sediment	Foot

**SECTION 477
MILLED RUMBLE STRIPS****SECTION 477 MILLED RUMBLE STRIPS.**

(page 151 English, page II.111 Metric) Add this new Section in numerical order.

DESCRIPTION**477.20 General.**

The work consists of constructing rumble strips on paved highway shoulders by milling grooves into finished hot mix asphalt surfaces.

CONSTRUCTION METHODS**477.61 Equipment.**

The equipment shall self-align with the slope of the roadway surface and/or any irregularities in the roadway surface.

The Contractor shall demonstrate to the Engineer the ability to achieve the desired groove without tearing or snagging the roadway surface prior to beginning the work.

477.62 Installation of Rumble Strips.

Rumble strips shall be installed in accordance with the locations, dimensions and patterns shown on the plans. Rumble strips shall not be installed on shoulders less than 2 feet wide, on bridge decks, within 50 feet of an intersection or major driveway, or on roadways with posted speeds less than 40 MPH.

In areas where acceleration and/or deceleration lanes have no paved outside shoulders, any rumble strips in the outside shoulders shall be terminated at the beginning of each deceleration lane and initiated at the end of each acceleration lane.

477.63 Control of the Work Area.

At the end of each working day, all equipment shall be moved to a location where it does not present a hazard to traffic. The pavement shall be cleaned by sweeping and the work area shall be reopened to traffic.

Pavement millings shall become the property of the Contractor and shall be removed and disposed off site.

COMPENSATION**477.80 Method of Measurement.**

Milled Rumble Strip will be measured by the total length of installed rumble strip. Milled Rumble Strip for Bicycle Traffic will be measured by the total length of installed rumble strip excluding the designed gaps. Breaks at castings, bridge decks, intersections or other breaks will not be measured for payment.

477.81 Basis of Payment.

Payment for Milled Rumble Strip and Milled Rumble Strip for Bicycle Traffic will be made at the contract unit price per foot of rumble strips, complete in place. Such payment will be full compensation for furnishing all equipment and labor for satisfactorily performing the work including cleanup and disposal of excess materials.

ADDENDUM NO. 1, AUGUST 29, 2014**SECTION 477 (Continued)****477.82 Payment Items.**

477.	Milled Rumble Strip	Foot (m)
477.1	Milled Rumble Strip for Bicycle Traffic	Foot (m)

SECTION 701 SIDEWALKS, WHEELCHAIR RAMPS AND DRIVEWAYS

SUBSECTION 701.20 General.

(page SUPPLEMENT C2012-61) Replace this subsection with the following:

This work shall consist of the construction of cement concrete wheelchair ramps, hot mix asphalt or cement concrete sidewalks and driveways in accordance with the specifications and within the tolerances established on the plans.

SUBSECTION 701.61 Cement Concrete Sidewalks, Sidewalks at Driveways, and Wheelchair Ramps.

(page SUPPLEMENT C2012-62) Add the following after second paragraph of B. Placing and Finishing Cement Concrete.:

Detectable warning panels conforming to the plans shall be securely incorporated into the work by means acceptable to the Engineer.

SUBSECTION 701.81 Basis of Payment.

(page SUPPLEMENT C2012-63) Replace the first paragraph with the following:

Cement Concrete Sidewalk, Cement Concrete Sidewalk at Driveway and Cement Concrete Wheelchair Ramp will be paid for at the contract unit price per square yard complete in place and shall include detectable warning panels.

SECTION 740 ENGINEER'S FIELD OFFICE AND MATERIALS LABORATORY (EACH WITH PERTINENT EQUIPMENT)

SUBSECTION 740.41 Engineers Field Office (Type A).

(page 186 English, page II.146 Metric) Replace number 8 with the following:

8. An electric sanitary hot and cold water cooler, supplied with cups and drinking water, a 3 cubic foot capacity refrigerator with freezer compartment and a 1 cubic foot capacity microwave oven.

SUBSECTION 740.41 Engineers Field Office (Type A).

(page SUPPLEMENT C2012-64, page 187 English, page II.147 Metric,) Replace number 20 b. with the following:

- b. 4 inch or 6 inch (150 mm) Plastic Cylinder Molds and Covers meeting the requirements of AASHTO M 205 and approved for use by the Research and Materials Division. Supply 5 cylinders molds per 150 cubic yards of concrete placement or fraction thereof with a minimum of 50 molds.

ADDENDUM NO. 1, AUGUST 29, 2014**SECTION 801
CONDUITS, MANHOLES, HANDHOLES, PULLBOXES AND FOUNDATIONS****SUBSECTION 801.81 Basis of Payment.**

(page SUPPLEMENT C2012-80) Replace the first paragraph with the following:

The unit contract price per foot, shall be full compensation for furnishing and installing all conduits, couplings, expansion fittings, elbows, bends, caps, sleeves, clamps, hangers, reducers, tees, jointing compound, sealing compound, cement concrete required in Subsection 801.60-F and 801.60-I, planking required in Subsection 801.60-G and gravel required in subsection 801.60-B; for placing the electrical conduit in accordance with these specifications, including all excavation (except Class B Rock) or jacking required, backfilling of the trenches, chipping or sawing of pavement, bedding or hanging of conduit and all other work incidental to the construction of the conduit system, except that when electrical conduit is included on any project as an integral part of a traffic control signal or Highway Lighting System and the conduit is not shown as a pay item, it shall be considered as incidental to the construction and be included in the lump sum price for such systems.

**SECTION 815
TRAFFIC CONTROL SIGNALS****SUBSECTION 815.80 Method of Measurement.**

(page 237/238 English, page II.200 Metric) Add the following paragraph after the third paragraph:

Wire Loop Installed in Roadway will be measured by the foot along the sawcut or trench that contains the wire, multiple wires or preformed loops.

SUBSECTION 815.81 Basis of Payment.

(page 238 English, page II.200 Metric) Add the following paragraph after the second paragraph:

The work of installing Wire Loop Installed in Roadway shall be full compensation for all labor, materials, and equipment necessary to sawcut, install the wire, multiple wires or preformed loops and seal the sawcut or trench as specified.

SUBSECTION 815.82 Payment Items.

(page II.201 Metric) Change the pay unit of item 819.832 from Meter to Each.

(pages 238 English, II.200 Metric) Delete payment items 817.70 to 817.73 and change 817.60 to 817.63 to 817.60 to 817.69.

ADDENDUM NO. 1, AUGUST 29, 2014**SECTION 850
TRAFFIC CONTROLS FOR CONSTRUCTION
AND MAINTENANCE OPERATIONS****SUBSECTION 850.21 Roadway Flagger.**

(page SUPPLEMENT C2012-93) Replace this Subsection with the following:

The Contractor shall provide the number of flaggers required in either the appropriate Temporary Traffic Control Plan (TTCP) template (see MassDOT's website at <http://www.massdot.state.ma.us/>), the Temporary Traffic Control Plan or that the Engineer deems necessary for the direction and control of traffic within the site. A flagger shall be used as directed by the Engineer in accordance with 701CMR 7.00, this section, and the TTCP. Any flagger determined by the Engineer to be ineffective in controlling traffic may be removed at the discretion of the Engineer. If a flagger is directed to be removed, the Contractor shall immediately comply with the directive from the Engineer and shall suspend operations as necessary until a qualified replacement can be provided. Such a suspension of operations shall not be considered as a basis for a claim or an extension of time.

MassDOT reserves the right to provide certified Roadway Flaggers or police officers, at the discretion of the Engineer.

SUBSECTION 850.43 Safety Signing for Traffic Management.

(page SUPPLEMENT C2012-96) Add the following paragraph after the 4th paragraph of the Subsection:

Rollup signs shall be fabricated from vinyl microprismatic retroreflective material.

SUBSECTION 850.44 Temporary Pavement Markings and Temporary Raised Pavement Markers.

(page SUPPLEMENT C2012-96) Replace the first paragraph with the following:

Glass beads, tapes and paints used for temporary pavement markings shall be lead free, conform to Subsections M7.01.07, M7.01.16, M7.01.23 and M7.01.24 and meet the retroreflectivity requirements of the MUTCD for a period of 90 days. Final determination as to pavement marking quality shall be made by the Engineer. The Contractor shall supply a retroreflectometer for this purpose.

SUBSECTION 850.55 Temporary Illumination for Work Zones.

(page SUPPLEMENT C2012-99) Replace this Subsection with the following:

All floodlights shall have flat lenses securely fastened to the housing. All floodlight fixtures shall be mounted at a sufficient height to allow for an aiming angle of 45 degrees from the vertical to the job site. An inventory of spare lamps and fixtures shall be maintained on the job site and all lamp or fixture failures shall be repaired or replaced immediately.

Illumination Standards for Work Area

The entire work area shall be illuminated to a minimum average of 10 foot-candles measured on a horizontal plane 6 inches above the work surface. A uniformity ratio (average to minimum) of 4 to 1 or better shall be maintained at all times in the work area. This shall apply to the work areas only. Any area where all phases of the work are completed need not be illuminated except for the safety and transition area lighting.

Illumination Standards for Transition Areas

The transition areas are the sections of roadway where road users are redirected out of their normal path.

The traveled way within these areas and all cones, drums, or other physical barriers placed on the roadway for the purpose of channelizing or restricting vehicular traffic shall be illuminated to a minimum average of 2 foot-candles measured on a horizontal plane 6 inches above the roadway surface. A uniformity ratio (average to minimum) of 4 to 1 or better shall be maintained at all times in the transition area. These areas to be illuminated shall be defined as beginning at the first cone, drum or other physical channelizing device, continuing across the full roadway width through the transition area, and ending where the traveled way attains a constant width.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION 850.55 (Continued)****Lighting Equipment Mounting**

Mounting shall be designed and constructed by the contractor to suit the configuration of the equipment to which the lighting is attached.

Mounting shall be secure to prevent excessive vibration. Care shall be exercised to ensure that fixture mounting will clear all overhead structures.

All equipment lighting shall be aimed in such a manner as to maximize the illumination on each individual task.

All lighting units shall be placed in such a manner as to avoid shadows on the work area or the travel area and to prevent excessive glare to the motorist.

An inventory of spare lamps and spare fixtures shall be maintained on the job site by the contractor and all lamp or fixture failures shall be repaired or replaced immediately.

SUBSECTION 850.81 Basis of Payment.

(page SUPPLEMENT C2012-105) Replace the second paragraph with the following:

Roadway Flagger will be paid for at the contract unit price per hour which shall include full compensation for all costs for providing flaggers. No allowance or additional payment will be made for required training, equipment, travel time, transportation, or any administrative charges associated with the costs of flaggers. No allowance shall be made for overtime payment rates. The Contractor shall not be charged nor compensated for the use of MassDOT employee flaggers. This item shall not be subject to renegotiation for any reason under Section 4.06 regardless of whether or not this item overruns or underruns.

(page SUPPLEMENT C2012-106) In the 4th paragraph from the bottom of the page change "...unit price per foot (m)..." to "...unit price each..."

SUBSECTION 850.82 Payment Items.

(page SUPPLEMENT C2012-107) Change the description of payment item 854. to Temporary Raised Pavement Marker, and the description of payment item 854.5 to Raised Pavement Marker Removal.

SECTION 860 REFLECTORIZED PAVEMENT MARKINGS

SUBSECTION 860.60 Equipment.

(SUPPLEMENT C2012-108) Add the following paragraphs to the end of this Subsection:

The Contractor shall supply an infrared pistol thermometer meeting the requirements of Section 460.60 for each thermoplastic traffic marking operation on the project. The thermometers will remain the property of the Contractor upon completion of the project.

The Contractor shall supply suitable gauges for measuring the thickness of pavement markings; a digital gauge for thermoplastic lines and wet film thickness gauges for painted lines. The gauges will remain the property of the Contractor upon completion of the project.

SECTION 901 CEMENT CONCRETE

SUBSECTION 901.40 Materials.

(page SUPPLEMENT C2012-110) Replace number 1. with the following:

1. Concrete cylinder molds with plastic covers shall conform to the requirements of AASHTO M 205. The standard concrete cylinder shall be 6 inches in diameter by 12 inches high for regular Cement Concrete. When the nominal maximum size of the coarse aggregate does not exceed 1 inch, 4 inches in diameter by 8 inches high cylinders may be used.

ADDENDUM NO. 1, AUGUST 29, 2014

**SECTION 945
DRILLED SHAFTS**

SUBSECTION 945.56 Drilled Shaft Excavation.

(page C2012-165 Supplement) Replace paragraph C. with the following:

C. Rock Socket Excavation.

Rock socket excavation is excavation that requires rock-specific tools and/or procedures to accomplish hole advancement, such as rock augers and core barrels. All excavation performed below the depth where rock socket excavation is authorized by the Engineer shall be considered rock socket excavation regardless of the density, strength, hardness, or changes in type or character of materials encountered.

ADDENDUM NO. 1, AUGUST 29, 2014**DIVISION III
MATERIALS SPECIFICATIONS****SECTION M
MATERIALS****SUBSECTION M MATERIALS**

(page 327 English, page III.3 Metric) Replace the paragraphs under Approval and Acceptance. with the following:

All materials must be approved prior to incorporation in the work. Approval of materials shall be in accordance with the applicable requirements of Subsection 5.03 and Section 6.00, Control of Materials. Materials may be approved at the source of manufacture or at the project site. Information regarding the origin, composition and/or manufacture of any material shall be furnished if requested by the Engineer.

Approval and acceptance of any material intended for use in the work of the Department is contingent upon the particular material conforming to a designated specification. All questions relating to materials will be resolved by the Research and Materials Section of the Department or its duly authorized representative.

The Department maintains a Qualified Construction Materials List (QCML) of commonly used materials that meet these specifications. The Qualified Construction Materials List is available at www.massdot.state.ma.us/highway.

**SECTION M4
CEMENT AND CEMENT CONCRETE MATERIALS****SUBSECTION M4.02.13**

(page 355 English, page III.38 Metric, page SUPPLEMENT C2012-220) Replace the last sentence of paragraph A with the following:

Slump, air content and temperature shall be measured and recorded when concrete cylinders are fabricated.

(page 355 English, page III.38 Metric, page SUPPLEMENT C2012-220) Replace paragraph B with the following:

For the purpose of making tests to determine the flexural or compressive strength of concrete, the Engineer reserves the right to cast such test beams or cylinders as he/she deems necessary.

The Contractor shall furnish concrete and such assistance as the Engineer may require.

After the fabrication of concrete cylinders by the Engineer, the concrete cylinders shall be protected and cured on the project by the Contractor in accordance with AASHTO T 23 and as directed by the Engineer without additional compensation. The Contractor shall furnish and maintain, without extra compensation, a protected environment to provide initial curing of all concrete cylinders at the project. The protective environment shall be available at each site where concrete is placed and then maintained by the Contractor until such time that all concrete cylinders have been transported to the laboratory for testing. The Engineer shall approve each protective environment prior to the beginning of any project concrete placement.

The protective environment shall be shielded from direct sunlight and radiant heating devices. The protective environment shall be capable of maintaining the temperature for the stored concrete cylinders in the range between 60 and 80°F and loss of moisture from the cylinders shall be prevented.

When moving the concrete cylinders into the protective environment, precautions shall be taken to avoid any damage to the freshly made concrete cylinders. If the top surface is marred during movement to the protective environment, refinish immediately.

The protective environment for the concrete cylinders shall consist of tightly constructed, firmly braced wooden boxes, damp sandpits, temporary building at construction sites, wet burlap covered in plastic in favorable weather, or heavyweight closed plastic bags. Other suitable methods may be used, upon approval by the Engineer, provided that the foregoing requirements limiting concrete cylinder temperature and moisture loss are met.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION M4.02.13 (Continued)**

Storage temperature shall be regulated by means of ventilation, or thermostatically controlled cooling devices, or by using heating devices such as stoves, light bulbs, or thermostatically controlled heating elements. A temperature record of the concrete cylinders shall be established by means of maximum-minimum thermometers.

After finishing the concrete cylinders, they shall be covered and placed immediately into the protective environment where they will remain undisturbed for the initial curing period.

Concrete cylinders that are to be transported to the laboratory for standard curing before 48 hours shall remain in the molds in a moist environment until they are received in the laboratory, demolded and placed in standard curing. Concrete cylinders that will be transported to the laboratory for standard curing after 48 hours age may be cured in the protective environment provided that the loss of moisture is prevented until the time of transportation and testing. Concrete cylinders shall be demolded no later than 48 hours.

28-day and 56-day concrete cylinders shall be transported to the laboratory for standard curing and testing by the Department personnel within six days of the time of cylinder fabrication. 7-day cylinders shall be transported to the laboratory as soon as possible but not until at least 8 hours after final set (Setting Time may be measured by AASHTO T197).

When the sequence of the construction operation is dependent upon the development of strength in concrete previously placed the specimens taken for this purpose shall be further cured after 24 hours as required in Section 9 of AASHTO T 23 by the Contractor, without additional compensation, under the direction of the Engineer

(page SUPPLEMENT C2012-221) Replace paragraph F with the following:

F. Individual strength tests shall not fall below the specified strength (f'_c) by more than 500psi (3.5 MPa). If the 28-day cylinder breaks fail to meet the specified strength, 56-day cylinder breaks shall be accepted as proof of reasonably close conformity with the specification. If the 56-day cylinder breaks fail to meet the specified strength, the Contractor may request permission to core the concrete to verify its strength. Coring may only be done with the permission of the Department, at locations chosen by the Department and within 2 weeks of being notified that the 56-day cylinder breaks have failed. The Department shall specify a minimum of 3 core locations. Core results shall be evaluated in accordance with ACI procedures whereby the average of all core breaks must exceed 85% of the specified design strength and no single core break may be less than 75% of the specified design strength. The Contractor may request permission to core the concrete immediately after the failure of 28-day cylinder breaks, rather than waiting for 56-day cylinder tests, if waiting for later tests will compromise the project's schedule. All concrete represented by the compression test that indicates a compressive strength of more than 500 psi below the specified 28-day strength will be rejected and shall be removed and replaced with acceptable concrete. However, the Contractor may, at his own expense, obtain and submit evidence as outlined below, acceptable to the Engineer, that the strength and quality of the concrete placed in the work is acceptable, then the concrete will be permitted to remain in place and the contractor will be paid at a reduced price as outlined below.

ADDENDUM NO. 1, AUGUST 29, 2014**SUBSECTION M4.02.13 (Continued)**

(page SUPPLEMENT C2012-221) Replace paragraph H with the following:

H. Evaluation and Acceptance of Concrete.

The strength of the concrete will be considered satisfactory provided that the average of all sets of three consecutive test results of the same concrete mix equal to or exceed the required specified strength f_c , and no individual test result falls below the specified strength f_c by more than 500 psi (3.5 MPa).

Non-destructive testing will not be permitted in lieu of compressive strength tests of concrete cylinders, air content tests by the pressure method, slump or other test for evaluation and acceptance on concrete placed on the projects. Coring is the only acceptance method to determine the in-situ characteristics of concrete. The size of the core shall be 4-inch (100 mm) finished diameter for concrete with $\frac{3}{4}$ inch (20 mm) or less aggregate and 6-inch (150 mm) finished diameter for concrete with aggregate greater than $\frac{3}{4}$ inch. The length of the concrete core, when capped, shall be as nearly as practicable twice its diameter and a strength correction factor in accordance with AASHTO T 24 must be determined based on the ratio of Length to Diameter (L/D). Cores with L/D ratio less than 1 shall not be tested. Wipe off the surface of the drilled cores and allow the remaining surface moisture to evaporate. When the surfaces appear dry but not more than an hour after drilling, place cores in separate plastic bags or non-absorbent containers and seal to prevent moisture loss. Allow the cores to remain in the sealed plastic bags or non-absorbent containers for at least 5 days after last being wetted before making the compression test.

A request for strength analysis by coring shall be approved by the Engineer prior to beginning the work. Coring will not be permitted if the Department determines it would be harmful to the integrity of the structure. Cores shall be obtained by the Contractor and witnessed by the Engineer in accordance with AASHTO T 24 and delivered to Research and Materials for testing in accordance with AASHTO T 22. The test results will be considered proof of in-situ concrete strength and will supersede all other strength data for the concrete represented by that placement. Cores shall be obtained no later than two weeks after the 56 day cylinder breaks have failed. All reinforcing steel shall be located with a pachometer around the proposed coring locations prior to the coring operation. The Department shall approve the location to be cored. And all cost associated with the coring operation including the repair of cored area shall be the responsibility of the contractor. The Contractor shall patch the core holes with low slump mortar, similar to that used in the concrete, immediately after coring, to the satisfaction of the Engineer. Acceptance by core method requires that the average compressive strength of three cores from the same concrete placement exceeds 85 percent of the specified design strength with no single core less than 75 percent of the specified design strength.

These cores may be subjected to petrographic analysis, if deemed necessary by the Engineer and at the expense of the Contractor, to determine if there is microscopy evidence that identifies the constituents of concrete, possible reasons for the strength deficiency of the in-situ concrete, if any, and to provide a basis for assessing the quality and long term durability of the in-situ concrete. The results of the petrographic analysis will be considered in conjunction with the results of concrete cylinders to determine if the concrete can remain in place or has to be removed.

Concrete that meets the strength requirements through the 28 day, the 56 day break or the core break shall be considered in reasonably close conformance with the specifications and no credit shall be taken.

Concrete with cylinder or core compressive strength (f_c) which fails to meet acceptance level requirements shall be evaluated for structural adequacy at the Contractors' expense. The Department shall review all production records, the concrete test records, petrographic analysis report, field notes, and the placement records for the concrete in question. If the Engineer determines the material is found to be adequate to remain in place, payment shall be adjusted in accordance with the following formula:

Pay adjustment for substandard concrete, $P = 2(f_c - \bar{f}_c)(UP)(Q)/(\bar{f}_c)$

Where \bar{f}_c = Specified minimum compressive strength at 28 days

f_c = Substandard concrete cylinder compressive strength at 28 days or compressive strength of substandard concrete cores determined by AASHTO T22.

P = pay adjustment for substandard concrete.

Q = Quantity of concrete represented by the acceptance cylinders tested.

UP = Unit contract price or the lump sum breakdown price per cubic yard for the class of concrete involved complete in place.

ADDENDUM NO. 1, AUGUST 29, 2014

**SECTION M9
MISCELLANEOUS MATERIALS**

SUBSECTION M9.30.0 Reflective Sheeting.

(page 407 English, page III.97 Metric, page SUPPLEMENT C2012-261) Replace the entire Subsection with the following:

This specification covers retroreflective sheeting designed to reflectorize traffic control signs, delineators, barricades, and other devices. All reflective sheeting shall meet the requirements of ASTM D4956 and AASHTO M268, and as listed below:

High Intensity (H/I) Sheeting for permanent traffic signs shall conform to ASTM Type III or IV.

High Intensity Prismatic (HIP) Sheeting for permanent traffic signs and temporary rigid construction signs shall meet or exceed the requirements of ASTM Type VIII.

Flexible High Intensity (H/I) Sheeting for drums, cones, and barricades shall conform to ASTM Type VI.

Flexible High Intensity Prismatic (HIP) Sheeting for rollup signs shall conform to ASTM Type VI.

*** END OF SECTION***

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